



June 5, 2007

**FACTS ABOUT EMBRYONIC STEM CELL RESEARCH
S. 5 - THE STEM CELL RESEARCH ENHANCEMENT ACT OF 2007**

- Stem cell research has the potential for finding cures for people suffering from devastating diseases such as Parkinson's, Alzheimer's, diabetes, osteoporosis, pulmonary fibrosis, muscular dystrophy, kidney and liver disease along with other debilitating diseases and health conditions.
 - More than 100 million Americans suffer from diseases that could potentially be cured by embryonic stem cells research.
- Diabetes is the sixth leading cause of death listed in the U.S and over 18 million people in the United States, or 6.3% of the population, have diabetes. Over 1 million new cases are diagnosed every year – and scientists have already shown they can direct the development of human embryonic cells into insulin-producing cells that might help cure juvenile diabetes.
- Not only does stem cell research hold promise for those who suffer from several debilitating diseases but it is also something that can save the taxpayers money in the long run.
 - According to a 2001 study by University of California San Francisco researchers, the costs of caring for California community residents with Alzheimer's disease were \$22.4 billion in 2000 and are expected to increase to \$42.8 billion by 2020 and \$68.1 billion by 2040.
- Embryonic stem cells offer more promise than adult stem cells because they can grow and differentiate into any of the body's cells and tissues and thus into different organs.
- This bill authorizes the Health and Human Services Department (HHS) to conduct and support research involving human embryonic stem cells that meet certain criteria, regardless of the date on which the stem cells were derived from a human embryo.
- This bill expands the number of stem cell lines that are eligible for federally funded research because under the current federal policy on human embryonic stem cell research, only those stem cell lines derived before August 9, 2001 are eligible for federally funded research.
 - **The stem cell lines designated by President Bush in August 2001 have proven much less useful than hoped for – making enactment of S. 5 critical.** According to the National Institutes of Health, of the 78 stem cell lines that were declared eligible for federal funding in the President's executive order of August 2001, only 21 lines are now still available for researchers. And many of these 21 "available" stem cell lines are contaminated with "mouse feeder" cells, making their therapeutic use uncertain.

- As NIH Director, Dr. Elias Zerhouni said before the Senate Appropriations Subcommittee on Labor, Health and Human Services, Education, and Related Agencies on March 19, 2007, "It's not possible for me to see how we can continue the momentum of science and research with the stem cell lines we have at NIH.From my standpoint as NIH director, it is in the best interests of our scientists, our science, and our country that we find ways- the nation finds a way- to go full-speed across adult and embryonic stem cells equally."
- In addition, the final version of S. 5 also contains an added provision that would direct the Secretary of HHS to conduct and support research on alternative human pluripotent (**stem cells not derived from human embryos**) stem cells.
- The bill lays out ethical standards for stem cell research:
 - (1) stem cells must be derived from human embryos donated from in vitro fertilization clinics for the purpose of fertility treatment that were in excess of the needs of the individuals seeking such treatment;
 - (2) the embryos would never be implanted in a woman and would otherwise be discarded; and
 - (3) such individuals donate the embryos with written informed consent and receive no financial or other inducements.
- California is a leader in innovation and technology, and in 2004 voters approved Proposition 71 to provide state funding and encouragement to scientists conducting stem cell research. Prop 71 authorizes up to \$3 billion over 10 years for stem cell research, making California the global leader in stem cell research.
- Federal funding also ensures that there is federal oversight over stem cell research, ensuring that researchers are complying with ethical guidelines.
- **This bill has strong bipartisan support – including the support of 72 percent of the American public.** A national poll, conducted by the Opinion Research Corporation in 2006, found that 72 percent of Americans support embryonic stem cell research, up from 68 percent in 2005. Embryonic stem cell research is supported by such key Republicans as Sen. John McCain, California Governor Arnold Schwarzenegger, former New York City Mayor Rudy Giuliani, and former First Lady Nancy Reagan.
- The scientists who did the research on turning mouse skin cells into stem cells still strongly support this bill – **arguing breakthroughs with human cells are years away.** The vast majority of scientists agree that embryonic stem cell research offers the greatest promise for developing treatments and cures for countless diseases and conditions. While the new studies turning mouse skin cells into stem cells hold great potential, there is no guarantee that the research can be replicated with human skin cells, as the scientists themselves are the first to caution. The authors of the new study on mouse skin cells unequivocally state that they remain fully supportive of embryonic stem cell research. "The reason that we embarked on these experiments was not to come up with a solution to those people who have objections to embryonic stem cell research. All of us strongly agree with human embryonic stem cell research," stated Dr. Kevin Eggan of the Harvard Stem Cell Institute, that led one of the mouse skin cell studies.